

## REMARKS

This is intended as a full and complete response to the Office Action dated October 6, 2006, having a shortened statutory period for response set to expire on January 8, 2007. Please reconsider the claims pending in the application for reasons discussed below.

Claims 1 and 3-32 remain pending in the application and are shown above. Claim 2 has been canceled by Applicant. Claims 1, 3, 5-7, 10-12, 15, 20, 22-24, and 27-30 are rejected. Reconsideration of the rejected claims is requested for reasons presented below.

Claims 1, 10, and 15 are amended to clarify the invention. Claim 28 is amended to correct an informality. These amendments are not presented to distinguish a reference, thus, the claims as amended are entitled to a full range of equivalents if not previously amended to distinguish a reference. Support for the amendments may be found in paragraphs [0009] and [0045] of the present application. No new matter has been introduced by these amendments.

### ***Claim Rejections - 35 U.S.C. § 101***

Claims 1, 10, and 15 are rejected under 35 U.S.C. § 101 as being directed towards non-statutory subject matter.

Applicants respectfully submit, however, that amended claims 1, 10, and 15 do not merely recite generating an intermediate result (a corrected optical frequency/phase parameter), but also recite generating and/or providing a reading of a corrected optical sensor signal or measurand generated therefrom.

Accordingly, Applicant requests withdrawal of the rejection and allowance of the claims.

### ***Claim Rejections – 35 U.S.C. § 102***

Claims 1, 3, 10-12, 20, 23 and 24 are rejected under 35 U.S.C. §102(b) as being anticipated by *McBride et al.* (U.S. Pat. No. 5,721,615, hereinafter "*McBride*"). Applicant respectfully traverses the rejection.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Further, the elements must be arranged as required by the claim. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

*McBride* does not teach, show, or suggest that the optical reference device or interferometer is "located in close proximity with the optical sensor such that the optical sensor and the reference device are exposed to substantially equal environmental conditions" as recited in claim 1, with similar language in claims 10 and 20. The Examiner takes the position on page 5 of the Office Action that "light is sent from the sensor *directly* to the reference device. This means the sensors are in close proximity to each other." However, *McBride* only teaches that light reflected back along sensing arm 210 "is propagated back towards coupler 206, where a part of the light propagates along arm 212 to the arm 226 of the reference interferometer 204" (col. 11 lines 59-65 and Fig. 5). *McBride* is silent as to the lengths of the sensing arm 210 and the reference arm 212, so light being sent *directly* from the sensor to the reference is not stated and cannot be implied.

The Examiner further states on page 5 of the Office Action that "the sensor and reference device can be located inside an aircraft airframe interior. (column 12, lines 26-27) Therefore, they are located in the same environment in the form of the aircraft airframe interior, and, thus, are exposed to substantially equal environmental conditions." However, *McBride* only teaches that a number of *sensing* elements may be disposed at different locations within an aircraft airframe structure; *McBride* is silent as

to the location of the reference device or interferometer 204 (col. 12 lines 21-27). Therefore, *McBride* does not teach, show, or suggest the optical sensor and the reference device being located in close proximity, much less being exposed to substantially equal environmental conditions.

Accordingly, Applicant submits that claims 1, 10, and 20, as well as those claims that depend therefrom, are allowable and respectfully requests withdrawal of this rejection.

Claims 1, 5-7, 20, 22 and 23 are rejected under 35 U.S.C. §102(e) as being anticipated by *Siems et al.* (U.S. Pat. No. 6,522,797, hereinafter "*Siems*"). Applicant respectfully traverses the rejection.

The method of claim 1 has been amended to comprise "interrogating at least one optical sensor with a light source" and "interrogating with the light source at least one optical reference device." Support for the amendment to claim 1 can be found throughout the specification and figures, but particularly in paragraph [0018] and Figs. 1 and 3A-B of the present application. *Siems* does not teach, show, or suggest interrogating at least one optical reference device with the same light source used to interrogate the optical sensor as recited in claims 1 and 20. Rather, *Siems* teaches, "The single-mode fiber 148 is interconnected to a 2x2 WDM coupler 149 where the signal L1 is optically coupled to the reference fiber 142, and the signal L2 is optically coupled to the fiber 12" (col. 9 lines 24-27 and FIG. 5A) where L1 and L2 are input signals from pulsed lasers 20 and 21, respectively. Thus, *Siems* teaches two light sources where the reference fiber 142 and the sensing fiber 12 receive light from different light sources, a configuration that would still be sensitive to light source frequency fluctuations, for example, in the resulting measurements. The Examiner's attention is directed to paragraph [0012] of the present application with regard to *Siems*.

Accordingly, Applicant submits that claims 1 and 20, as well as those claims that depend therefrom, are allowable and respectfully requests withdrawal of this rejection.

***Allowable Subject Matter***

Claims 15 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. § 101 set forth in this Office Action. Claims 4, 8, 13-14, 16-19, 21, 25-26 and 31-32 are objected to as being dependent upon a base claim rejected under 35 U.S.C. § 101, but would be allowable if the base claim was rewritten or amended to overcome the rejection under 35 U.S.C. § 101. In response, Applicant has amended claims 1, 10, and 15 to overcome the rejection as described above, and Applicant submits that these claims are allowable for at least the arguments presented above.

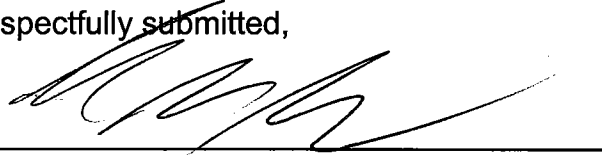
Accordingly, claims 1, 10, and 15, as well as claims dependent therefrom, are believed to be in condition for allowance, and withdrawal of this rejection is respectfully requested.

### ***Conclusion***

In conclusion, the references cited by the Examiner, alone or in combination, do not teach, show or suggest the invention as claimed.

Having addressed all issues set out in the office action, Applicant respectfully submits that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,



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